





The Beginning of Plum Creek

- ▶ 1945 – lumberman D.C. Dunham moves his sawmill from the banks of Plum Creek, MN to Columbia Falls, MT and calls it Plum Creek Lumber Company
 - Trees removed from the construction of Hungry Horse Dam fed the mill
- ▶ 1966 – Dunham dies and his family sells Plum Creek Lumber Company to Northern Pacific Railroad
- ▶ 1970 – Northern Pacific Railroad merges with Morgan's Northern Pacific and is renamed Burlington Northern Railroad





The Beginning of Plum Creek (cont.)

- ▶ 1989 - Burlington Resources sells its timber assets and mills to Plum Creek
- ▶ 1993 – Plum Creek acquired 865,000 acres of land in Montana from Champion International
- ▶ 1999 – Plum Creek was reorganized as a Real Estate Investment Trust (REIT), which attracted investors and purchasers of stock





Plum Creek's Core Business

▶ Timber and Natural Resources

- Growing trees and selling logs
- Energy and non-timber resources

▶ Manufacturing

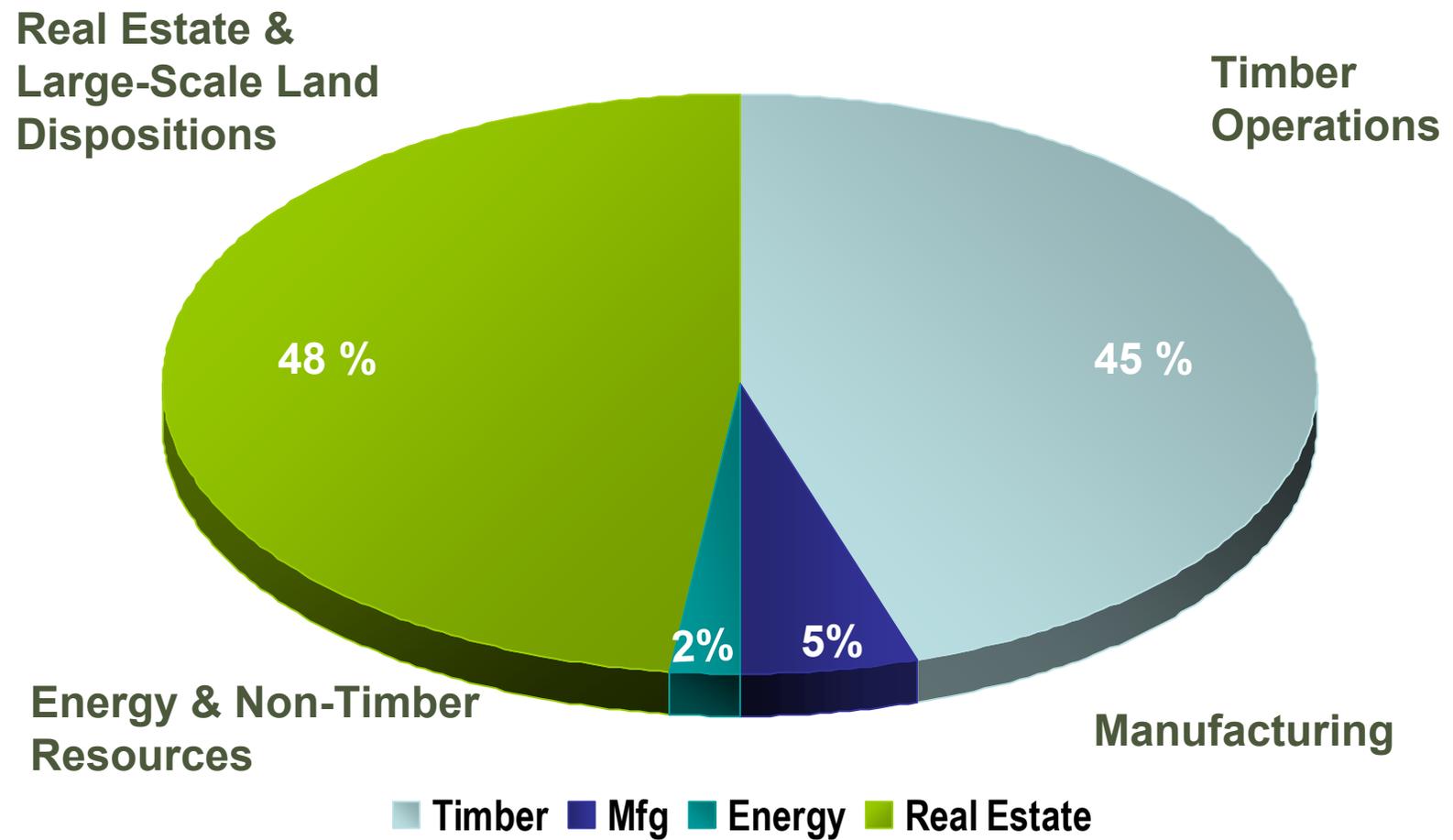
- 2 Plywood Plants
- 2 Medium Density Fiberboard Plants
- 6 Lumber Mills

▶ Real Estate

- Higher and Better Use sales (recreational properties)
- Conservation sales
- Development



Plum Creek Business Mix





Electricity Costs For Manufacturing

- ▶ **Monthly electricity costs are approximately \$1.9 mil**
 - MDF is approximately 50%
 - Plywood Plants are about 20%
 - Lumber Mills are 30%

- ▶ **MDF process is a large user of energy**
 - Electricity (About 50% is used in the refining process)
 - Biomass (Steam only)
 - Natural gas (Process and environmental heat)
 - Sander dust (Process heat)
 - Resin (Derived from natural gas)





Types of Efficiency Projects Thus Far

- ▶ **Plant compressed air system upgrades**
 - Air dryers
 - System reservoir and piping upgrades
 - VFDs on Compressors
- ▶ **High pressure blower to belt conversions**
 - Blower to air ride belt (Wood chips)
 - Blower to trough belt (Boiler fuel)
- ▶ **Fan VFD conversions**
 - Boiler ID fan
 - High pressure blower (Wood chips)
- ▶ **Lighting retrofits**





Project Criteria

- ▶ **Internal rate of return threshold**
 - 60% for energy conservation projects
 - 50% for all other manufacturing process improvement projects

- ▶ **Zero or better impact on production volumes**

- ▶ **Down time and startup time is a factor**





Project Approval

- ▶ Any employee can submit a project

- ▶ Subject to plant review
 - Maintenance
 - Operators
 - Managers

- ▶ Engineering review
- ▶ VP of manufacturing approval
- ▶ Corporate officers approval upon application for funding





Program Improvements Since PC Exposure

- ▶ Paperwork is easier
- ▶ BPA engineers continue to gain knowledge of industry processes
- ▶ Metering and Verification done by a third party
- ▶ Energy conservation in the media





Suggestions To Improve Programs

- ▶ **Improve customer awareness of the intent**
 - Why is conservation good for the utility?
 - Why is it good for BPA?
 - Why is it good for me?
- ▶ **Provide funding for customer participation**
 - Some vendors provide funding repaid by energy savings
 - Vendor payback is usually at a premium and may kill the project
- ▶ **Up the Ante**
 - Raise incentives
 - Provide part time project manager/engineer





Questions?

